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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,555	04/28/2006	Teemu Ronkainen	1034456-000014	8172

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BUCHANAN, INGERSOLL & ROONEY PC  
POST OFFICE BOX 1404  
ALEXANDRIA, VA 22313-1404

EXAMINER
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NGUYEN, MATTHEW VAN

ART UNIT	PAPER NUMBER
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2838

NOTIFICATION DATE	DELIVERY MODE
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07/11/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/577,555	<b>Applicant(s)</b> RONKAINEN ET AL.	
	<b>Examiner</b> MATTHEW V. NGUYEN	<b>Art Unit</b> 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/28/06</u> .   | 6) <input type="checkbox"/> Other: _____                          |

1. The disclosure should be carefully reviewed and ensure that any and all grammatical, idiomatic, and spelling or other minor errors are corrected. For instance, in claim 1, line 6, "temperate" should be changed to – temperature --.
2. The abstract of the disclosure is objected to because it should be provided in a separate sheet. Correction is required. See MPEP § 608.01(b).
3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kumar et al. (U.S. Pat. No. 5,712,802).

With regard to claims 1-10, Kumar et al. (i.e., Figs. 1-4, 19) shows a method and an apparatus in connection with an inverter that comprises several power semiconductor components (42) and a control apparatus (61) to control them, the control apparatus being arranged to control the power semiconductor components in response to a control quantity to generate an output voltage, the method comprising the step of determining the temperature or an electric quantity affecting the temperate of one or more power semiconductor components (col. 3, lines 4-6), by wherein the method also comprising the steps of determining the change of the temperature or an electric quantity affecting the temperature of one or more power semiconductor

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components (col. 3, lines 7-9), and controlling with the control apparatus the power semiconductor components in response to both a control quantity to generate an output voltage and the change rate of the temperature or a quantity affecting the temperature of the power semiconductor components to reduce temperature variation in such a manner that, as the temperature or quantity affecting the temperature increases, the temperature increase rate is slowed down and, as the temperature or quantity affecting the temperature decreases, the temperature decrease rate is slowed down (col. 3, lines 10-26); the inverter also comprising a cooling element (28) arranged to cool the power semiconductor components, wherein the cooling element is a controllable cooling element; the determination of the temperature of a power semiconductor component comprising the steps of determining the size of the current running through the component and the size of the voltage over the component, determining the number of switchings in the power semiconductor component, and calculating the temperature of the power semiconductor component on the basis of the determined size of the current and voltage and the number of switchings by using a temperature model made in advance of the power semiconductor component (col. 3, lines 27-36); the control of the power semiconductor components in response to the change rate of the temperature or quantity affecting the temperature of the power semiconductor components to reduce the temperature change and the change rate comprises the step of increasing the switching frequency of the power semiconductor components in response to the decrease of the temperature or quantity affecting the temperature of the power semiconductor components or decreasing the switching frequency of the power

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semiconductor components in response to the increase of the temperature or quantity affecting the temperature of the power semiconductor components (col. 7, line 64- col 8. line 2; and col. 13, line 38-42); the control of the power semiconductor components in response to the change rate of the temperature or quantity affecting the temperature of the power semiconductor components to reduce the temperature change and the change rate comprises the step of increasing the reactive current level of the power semiconductor components in response to the decrease of the temperature or quantity affecting the temperature of the power semiconductor components or decreasing the reactive current level of the power semiconductor components in response to the increase of the temperature or quantity affecting the temperature of the power semiconductor components (col. 6, line 59 – col. 7, line 9); the cooling element being a motor-operated fan, characterized in that wherein the control of the cooling element in response to the change rate of the temperature or quantity affecting the temperature of the power semiconductor components comprises the step of increasing the rotation rate of the motor-operated fan in response to the increase of the temperature or quantity affecting the temperature of the power semiconductor components or decreasing the rotation rate of the motor-operated fan in response to the decrease of the temperature or quantity affecting the temperature of the power semiconductor components (col. 8, lines 35-41); the quantity affecting the temperature being a torque, current or voltage instruction, or a defined torque, current, or voltage of the machine (col. 7-64 – col. 8, line 2).

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kato (U.S. Pat. No. 4,736,595), Sato et al. (U.S. pat. No. 6,724,313) and Honda (U.S. Pat. No. 6,978,628) also discloses cooling systems each of which in connection with an inverter that comprises several power semiconductor components and a control apparatus arranged to control them.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW V. NGUYEN whose telephone number is (571)272-2081. The examiner can normally be reached on 8 HOURS M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, AKM ULLAH can be reached on (571)272-2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/MATTHEW V NGUYEN/  
Primary Examiner, Art Unit 2838